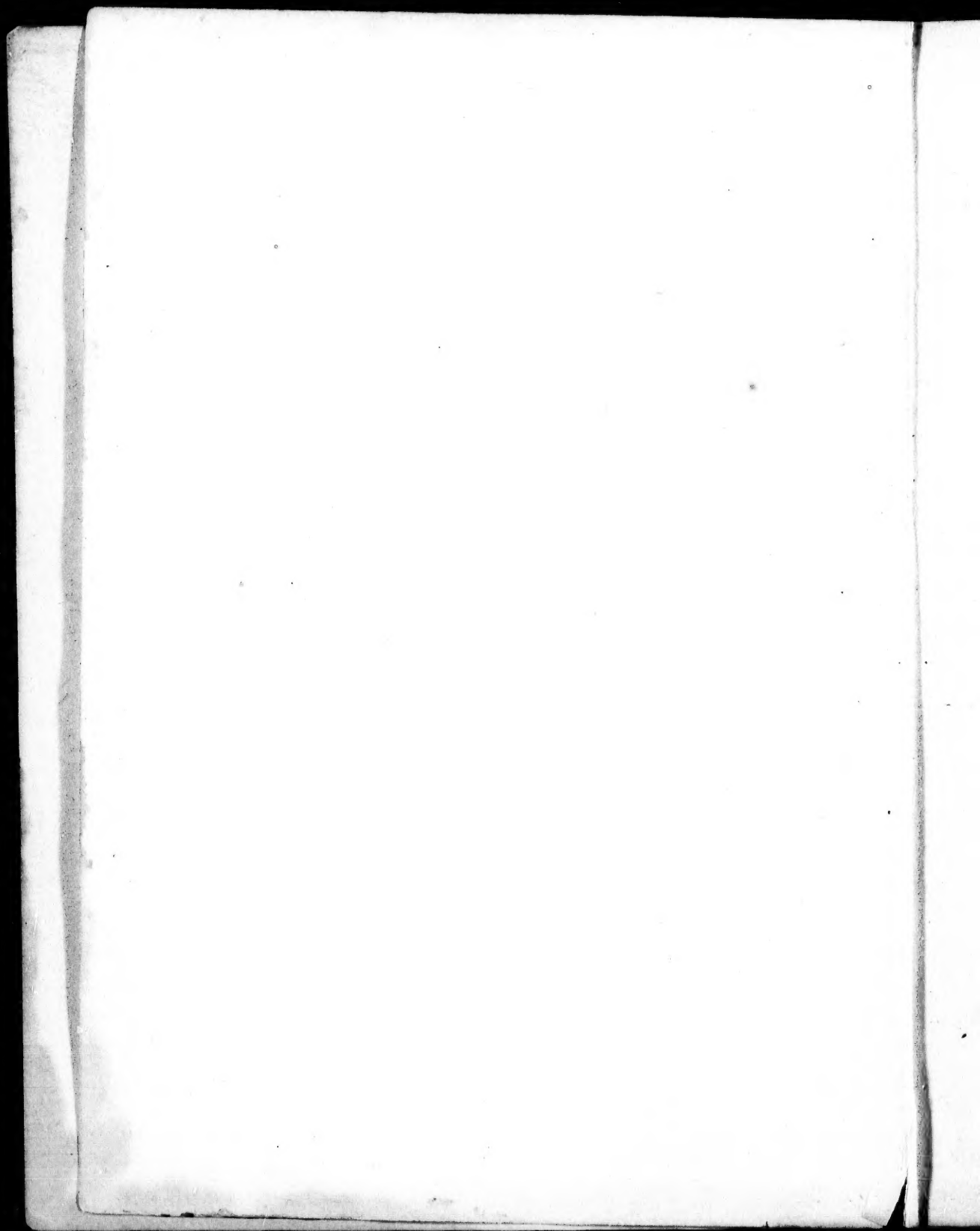




# RULES AND REGULATIONS

FOR THE

## EMPLOYÉS IN THE DEPARTMENT

OF THE

## MONTREAL WATER WORKS.



MONTREAL:

J. STARKE & CO., PRINTERS, ST. FRANCOIS XAVIER STREET.

1873.

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*To the Chairman and Members of the Water Committee:*

GENTLEMEN,

I beg herewith to submit, for your approbation, a set of rules and regulations for the guidance of the different Employés under the control of the Water Department, according to a resolution of your Committee, dated on the 9th June, 1873. This is a compilation of most of the few regulations which were already carried out, with additions I have thought fit to introduce. I have put them in the shape of a small pocket-book, in order to afford copies of it to every Employé in the Department, for whose guidance these have been made, so that every one may have a correct knowledge of his respective duties and obligations.

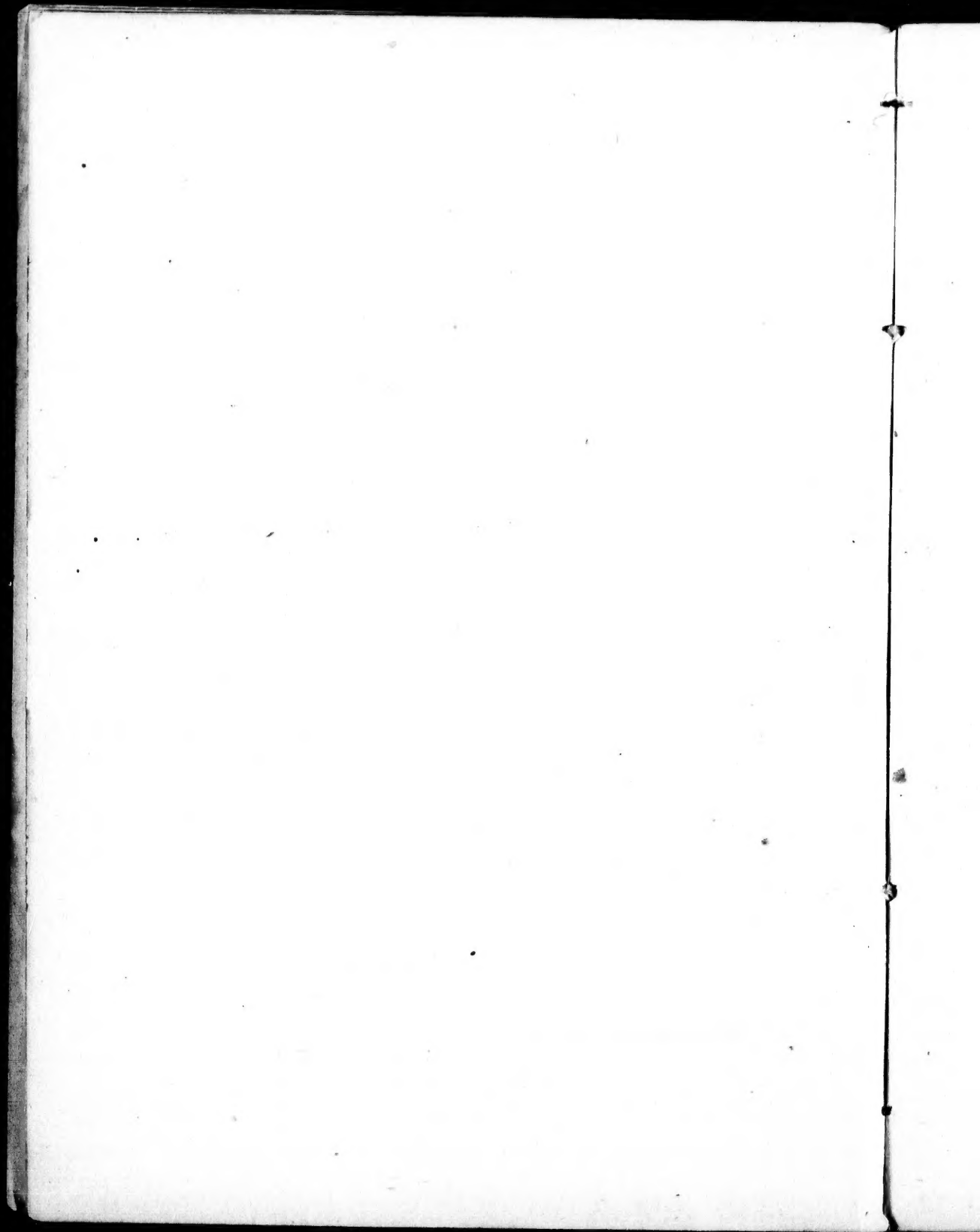
Its distribution to the public will also afford to the members of your Committee and to the citizens generally, an insight of the workings of the Department, and by that be the means of getting a check to any abuse which may occur on the part of any Employé who should be neglecting these Rules. Besides this, it will be advisable to have posted up in the different buildings of the Department, hand-bills containing the portion of the Rules concerning such branch of the Department for which such a building is erected.

Respectfully submitted,

LOUIS LESAGE,  
*Supt. of W. W.*

*Montreal, August, 1873.*

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RULES AND REGULATIONS  
FOR THE  
*STAFF OF THE*  
ENGINE AND WHEEL-HOUSE  
OF THE  
*MONTREAL WATER WORKS.*

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Staff at Engine and Wheel-House to be composed as follows:—

- 1 Chief Engineer.
- 2 Engineers at Wheel-House.
- 3 Engineers at Engine-House (one permanent;  
the other two temporary.)
- 3 Oilers (one permanent; the other two temporary.)
- 9 Stokers.
- 6 Coal-Heavers.
- 2 Carts, and four labourers entering coals  
inside building.
- 2 Weighers.
- 1 Time and Store-Keeper.

The Chief Engineer shall have general charge and supervision over the Engine and Wheel-House and their Machinery, and also over the men employed in working them, for the proper carrying out of the following Rules:

1st. He shall see that all the men under his charge are doing their duty properly, and shall keep a record of any neglect or departure from these Rules by any of them, such record to be kept in an Office Book, open to the inspection of the Superintendent or the Water Committee.

2nd. He shall be responsible for the proper working of the Machinery, and shall satisfy himself, from time to time, that it is kept in good order.

3rd. The Chief Engineer shall also be responsible for the proper working of the Safety Valves, and shall satisfy himself, from time to time, that they are so loaded as to blow off at the pressure of steam limited by himself.

4th. The pressure of steam allowed upon the Boilers shall be limited by the Chief Engineer, who shall post the same over his

own signature in the Engine-Room, for the information of those in charge of the Engine and Boilers.

5th. It shall also be his duty to see that the building and Machinery are kept clean, and in good order; to look after the stores, such as the oils, tallow, cotton waste, packing material, fuel, &c., and see that his employés are using them properly, as well also that they take proper care of their tools and utensils.

6th. He shall send every month to the Office of the Superintendent, a monthly return of the working of the Wheels and Steam-Engines, according to blank forms provided by the Department.

7th. He shall superintend the different repairs and alterations which are taking place, from time to time, in the Wheel-House or the Engine-House, as well as on the grounds round the Wheel-House.

8th. He shall provide by written requisition to the Superintendent's Office, or otherwise by giving due notice, for all the several materials or supplies required for the Works.



9th. He shall visit the Work-Shops in which the repairs or alterations to the Machinery, or any new work are carried on, so as to satisfy himself that everything about them is correct.

10th. He shall take a general interest in all things belonging to the Department in the Works under his control. He shall see that all the employés, labourers or mechanics are doing their duty, and discharge any of them not following his instructions, or idling away their time. As the Water Committee consider that he is responsible for the proper management of all matters connected with the buildings and apparatus at the Wheel and Engine Houses, they expect that everything will be kept in proper order, and with all possible economy consistent with the safety and efficiency of the works.

**Duty of Engineers and their Assistants at  
Wheel-House.**

11th. It shall be the duty of the Engineer in charge of the Wheels and Pumps to see that the Wheels are kept going at their pro-

per speed, the Machinery well oiled and cleaned, and that the proper level of the water in the forebay be obtained. He is responsible for the proper working of the Machinery during his watch, for the proper attention to the journals, connections or other parts.

12th. It shall be the imperative duty of the Engineer in charge, in the event of anything occurring to the Machinery, by which their safety may be endangered, at once to stop the Wheels, and immediately report such occurrence to the Chief Engineer.

13th. While on duty, the Engineer, or his Assistant, is to keep a constant watch on the Machinery, never to absent himself from his place of duty, except on leave from Chief Engineer; neither to engage in a long conversation with any person visiting the Works under his charge.

14th. It shall be also his duty, with the help of his Assistant, to keep the building clean, and do all the necessary work to that effect, according to what the Chief Engineer may direct.

15th. It shall be the duty of the Assistant to keep all the working parts of the Machinery well oiled and perfectly clean; also, the buildings, and perform any other labour in connection with the Works, as may be directed by the Chief Engineer.

16th. It shall be also the duty of all the Engineers, and of their Assistants, to be on watch each in the order and in the manner prescribed by the Chief Engineer, and to keep a record of the duty of the Wheels and Pumps, and enter every day in a book kept for the purpose, all the required information.

#### **Duty of Engineers at Engine-House.**

17th. It shall be the duty of the Engineer in charge of the Engine to see that the pressure of steam is kept up uniformly to the limit allowed by the Chief Engineer, and that the speed of the Engine is also maintained at a uniform rate. He shall be responsible for the proper working of the Engine during his watch, for proper attention to the journals, connections, or other parts of the Engine.

18th. He shall satisfy himself, at least once every half hour, that the feed water supply is properly kept up, and the try-cocks and glass gauges in good working order.

19th. The Engineer in charge of the Engine shall also be responsible for the general management of the Boilers during his watch, and shall report to the Chief Engineer any case of neglect of duty or of omission to carry out or observe the Rules here laid down.

20th. It shall be the imperative duty of the Engineer in charge of the Engine, in the event of anything occurring to the Machinery or Boilers by which their safety may be endangered, *at once to stop the Engine*, close the dampers, open the furnace doors, and, if necessary, draw the fires, and immediately report such occurrence to the Chief Engineer.

21st. He shall also keep a record of the duty of the Engine, and enter every day in a book kept for the purpose all the required information.

### **Duty of Oilers.**

22nd. It shall be the duty of the Oilers to keep, each in their turn, the Machinery clean, the polished parts bright, and the cylinders, journals, connections, &c., well lubricated, according to the directions of the Engineer in charge, and shall make themselves generally useful about the Engine-Room.

23rd. Also, to keep the Engine-Room clean, for which purpose the Chief Engineer may direct any of the Firemen or Coal-Heavers to help the Oilers.

### **Rules to be Observed by the Firemen.**

24th. Firemen in charge of the Boilers shall be responsible for the feed-water, and shall at once report any derangement of it, or of the glass gauges, or of the try-cocks, to the Engineer in charge, who shall examine the cause thereof, and proceed to correct it; or failing to correct it, he shall report the same to the Chief Engineer, in accordance with the foregoing Rules.

25th. It shall also be the duty of the Firemen to keep their furnace fires clear from clinkers, and maintain them at a proper coal-ing level, as instructed by the Chief Engineer. It shall also be their duty to keep the steam pressure up to the required limit, and they shall at once report any increase of pressure beyond the limit allowed to the person in charge of the Engine; and in the event of no notice being taken of such Report, by lowering the pressure to the limit allowed, they shall report the same immediately to the Chief Engineer.

26th. Any person in charge of the Engine or Boilers shall at once, and without further consideration or advice, proceed to draw the fires the moment it is found that there is no water in the gauges.

27th. Firemen shall be very particular in cleaning their furnaces, to guard against all manner of waste, when removing the clinkers from the furnaces, or ashes from the ash-pits.

### **Duty of the Time and Store-Keeper.**

28th. It shall be the duty of the Time and Store-Keeper to make and send to the Superintendent's Office a weekly return of the men employed at the Wheel-House and Engine-House, giving their time and trade, the kind of work, the part of the Machinery they are working at, a return of the different materials used, and the name of the party from whom they came.

29th. To ascertain the correctness of the supplies sent to the Wheel-House, such as oil, tallow, coal, waste, planking, utensils, &c., and make a monthly return at the Superintendent's Office. (The certificate written on the invoice of the goods is also required.)

30th. He shall keep a daily record of the working of the Wheels and of the Engine, according to the blank forms furnished by the Department, and shall make a daily return by telegraph, at about 9 o'clock a. m., to the Office of the Superintendent, of the level of the head water, the strokes of the Pumps, of the Wheels and Engines, the pressure of

water on the gauges, &c., according to instructions from the Superintendent. In general, he shall perform all the telegraphic communications between the different stations of the Water-Works Department.

31st. To have the care of all the stores, and keep strict account of their consumption, as he shall be held responsible for their proper use, and to carry out all instructions the Chief Engineer may give him from time to time.

32nd.—All the employés of the above staff are under the control of the Chief Engineer, and have to follow his directions in all that concerns the carrying out of the foregoing Rules; and in case of repairs being done to the Machinery or Buildings, where their assistance may be required, they shall turn out and perform, according to their capacity, any work that the Chief Engineer may order.



## Duty of Foreman of the Water Works Shops.

The Foreman of the Water Works shops shall have general charge and supervision over the work-shops, the repairs to pipes, hydrants, stop-cocks, foot-paths, &c., in the different streets of the city, and over the mechanics and laborers employed in the different kinds of work required ; and shall be responsible for the proper carrying out of and observance of the following rules :—

1st. He shall inform himself as to the knowledge and experience of the persons under his charge, and be satisfied that they are in all respects competent and reliable men, fitted for the duties in which they are severally employed.

2nd. It shall be his duty to see that the men under his charge begin and finish their day's work at the proper time and hour ; to keep a record of any neglect or departure

from these rules by them, such record to be kept in an office book open to the inspection of the Superintendent or of the Water Committee.

3rd. It shall also be his duty to see that the Water Works shops and yards are kept clean and in good order ; to look after the stores, such as the oils, tallow, packing material, fuel, &c., and that his employés are using them properly, as well also that they take proper care of their tools and utensils.

4th. It shall be his duty also, when any invoice bill containing the purchase of any material or stores is referred to him for his certificate, to examine the quality of the material or stores mentioned in the said bill or account ; to verify their number and weight, to examine the quality of workmanship (if a piece of mechanism), in a word, to satisfy himself that the delivery is made in accordance with the terms of the invoice, and to keep a receipt and delivery book.

5th. It shall also be the Foreman's duty to inspect the foundries and work-shops where works for pipe laying, iron, lead, brass, wood,

stone, &c., for the Montreal Water Works are carried on, and to examine the different pieces of work before they are admitted into the Corporation shops or yards, in order to be satisfied that they are according to the terms of the contract or order.

6th. It shall also be his duty to present every day, at the office of the Superintendent, a report of the work going on under his charge, and a list showing the names of the men employed and of the streets where they are employed.

### **Duties of Mechanics and Workmen.**

7th. No workman will be allowed to remove stores of any description from the premises, without stating where the same are to be used, or producing a written order signed by the Foreman in charge of the work they are to be used for.

8th. Any tools that may be required must be charged to the parties for whose use they are delivered, and an account taken of them before leaving the shop.

Parties returning tools, &c., should be particular to see that they are entered as returned in the books, otherwise they will render themselves liable to have the value of them stopped from their wages. (No tools are permitted to be lent.)

9th. All mechanics or workmen, such as plumbers, carpenters, blacksmiths, masons, when using any material or stores in their work, must make a daily return to the work-shops Foreman, of the quantity used, and the purpose for which it has been used.

10th. No workman, employed wholly or partially in the shop, must leave the premises under any pretence, without first reporting it to the Foreman of the shop, otherwise the time so absent will be deducted from his pay.

11th. Every workman who shall be found in any other street or place than where he is sent to, shall be discharged, unless a good and satisfactory reason be assigned.

12th. Every workman shall be required to see to the safety of the cuts they are working at, at the time of quitting them at night; he shall report to the Foreman their condition,

that the night watchman may attend to them with the proper lights for their safety. (Any neglect of this rule will be punished by discharge.)

13th. No workman will be allowed in any of the work-shops of the department except on particular business, and all mechanics shall confine themselves to their respective departments.

14th. No workman or mechanic shall be allowed to bring any intoxicating liquors in the work-shops, under pain of dismissal.

15th. Every workman who shall leave any stores or material in the location of his work, will be responsible for their safety, and should they be missing, he shall be charged with the amount from his pay.

16th. The Foreman shall have power to engage or dismiss workmen who are in his gang or under his supervision.

#### **Duties of Valvemen and Hydrant Inspectors.**

17th. It shall be the duty of the Valvemen and Hydrant Inspectors to visit, from time to time, first, all the valves and stop-cocks, and

second, all the fire hydrants of the city, in order to keep them well oiled and in good working order, and to report themselves daily to the Foreman of the work-shops.

18th. Whenever a valve, or a stop-cock, or a hydrant, is detected out of order, it shall be the duty of the Valvemen or the Fire Hydrant Inspectors, as the case may be, to report immediately the case at the work-shops, and enter in a book kept there for this purpose, the nature of the case. It shall also be their duty to report to the work-shops any leakage or waste of water from the city mains or service pipes, which they may happen to observe in going round their beats.

19th. It shall be the duty of the Night Watchman and Valveman occupying the Corporation dwellings at the work-shops, to be all the time present during the night-time, holidays, Sundays, except in the case of being called out on duty, otherwise they will not be allowed to be away, except on leave of absence from the Foreman of work-shop, who shall see that there is some one in their place to perform their duty.

### **Turning Off the Water.**

20th. Whenever it is necessary to turn off the water, the Valveman or his Assistant shall give notice of it to the people of the district where the water is to be turned off, and shall remain there constantly in readiness to let on the water in case of fire in that locality.

21st. When a main pipe is to be cut off for repairs, &c., the Valveman or his Assistant shall have on the spot a wooden plug of the diameter of the said pipe, so as to be able to plug instantly the same if required in case of fire.

22nd. When the water is to be kept turned off for several days, the Valveman or his Assistant shall make arrangement to let on the water at certain hours of the day, for the water tenants of the locality.

### **Warning the People.**

23rd. The warning must be given by the Valveman or his Assistant, by ringing a bell in the streets where the water is to be shut

off, and sufficient time must be allowed the consumers to draw water, which space of shall time in no case be less than half an hour.

24th. Every time the water is to be turned off, the Foreman or the Valveman shall give notice at the office of the Superintendent, stating the streets, hour, and time the water is to be turned off.

25th. A copy shall be given to every Valveman or other Employé; and any infringement of these rules will be punished by immediate expulsion from the department.

**Duties of Time and Store Keeper at  
Work-Shop.**

26th. It shall be the duty of the Time and Store Keeper at the work-shop, to keep all the books required for the men's time, the invoices of all the goods received, the materials delivered out of the work-shops, and to perform all the office work required.

27th. It shall be his duty also to check all all the goods coming in or going out of the work-shop, and to keep a general supervision over the tools, utensils, stores, &c., which are in the stores and yards of the department.



28th. He shall furnish every day, to the Superintendent, a list of the men employed, and the respective kind of work they are at, and of the street in which they are placed.

29th. He shall register, in proper books, all the notes and complaints brought in by the men employed, and take from the Superintendent's office book all the different orders which are destined for the work-shop, and check in the said book all orders which have been executed the day or days previous.

30th. He shall perform all the office duties that may be imposed upon him by the Foreman of the work-shop, under whose control he shall be.

## Duty of the Street Foremen.

*Clauses.* 1st. Foreman must make every week, on the day pointed out by the Superintendent, a return of the work done during the week:—1st. A return, on a blank sheet, of his men's time, copied out from his book, which book he must also get from the office. 2nd. Another return also of the work done by him during that week, mentioning the streets and the number of days in each of these streets, and, if he is laying service pipes, he shall also take the Nos. of the houses to which the service pipes are put in, with the names of the proprietors.

2nd. He shall also measure carefully the length of every service pipe, and send these measurements to the Foreman of the Water Works Shops for the plumber, to prepare the lead pipe.

3rd. Whenever the Foreman of the street wants any material, or any mason, or any other mechanic, he shall send an order for

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them to the said Foreman of the Water Works Shops, specifying the street where these men or materials are wanted, and then it will be the duty of the Foreman of the said Water Works Shops to book all and each of these things, in order to make a return of them to the Office of the Superintendent at the end of each week.

4th. The Foreman shall be responsible for all the tools delivered to him by the Foreman of the Water Works Shops. He will have the tools put under key every night. He will have also the work executed according to these specifications. When any thing is wanted from the shop he must send a written order to that effect, and observe the Regulations of the Shop in all cases. At the time of the pay he must be present at the office to see his own men paid.

5th. Before opening any trench for the service pipes, see the proprietor of the house or his representative, and ascertain where the service pipe has to be put in.

6th. Never cut the street on both sides at the same time, but take each side, one after

the other, and by that means allow a free passage.

*Excavation.* 7th. The Foreman shall not begin any excavation in any street without an order from the Superintendent. In opening a trench the Foreman shall order the Macadam or stone paving to be put on one side and the earth on the other, so that in refilling, each material may be brought back to its same place, and the street put in the same condition as before.

*Sewers.* 8th. In opening a trench parallel to a sewer, the Foreman will be bound to keep it at least three feet off that sewer, and every time the trench will come unavoidably in contact with it, he shall have it repaired in a solid manner, taking care to employ a proper mechanic to that effect. The same thing shall be observed for gas pipes.

*Rock.* 9th. The Foreman will have to take the greatest care to prevent any accident in blasting; and in every case he shall cover the place to be blasted with heavy boards, and give a good warning a few minutes before the explosion.

*Re-filling.* 10th. In re-filling, the earth shall be packed as solid as possible all round the pipes, in layers of not less than nine inches, with pounders of twenty pounds weight, one for every two men filling, and no trench so filled to exceed more than five inches the general level of the street, including the Macadam on the top.

*Boulders.* 11th. Any stone or boulder coming out of a trench, shall be put back immediately below the Macadam, provided that these stones or boulders be not more than a quarter of a yard in size; if bigger, the Foreman will have them removed immediately to the nearest place of deposit.

*Surplus Earth.* 12th. The same, also, for the surplus earth coming out of the man-holes, or of the trenches.

*Water in Trenches.* 13th. Every time there will be water in the trenches, it shall be pumped out before re-filling.

*Paving.* 14th. When a trench shall be opened in a paved street, the Foreman shall take great care to have this paving removed carefully, and employ proper men to that

effect, and to replace the broken blocks by new ones.

*Footpaths.* 15th. In any case the Foreman will not be allowed to cut the timber supporting the planks of the footpath, but he shall have to open a trench between these timbers, in order to introduce the pipe through the wall of the house, and he shall also see that the footpath be well repaired, and every missing plank or stone replaced.

*Gutters.* 16th. The Foreman shall not be allowed to break any of the street gutters, nor to block them up with earth; but in all cases he shall tunnel under them, and always allow a free passage for the water.

*Boring through Walls.* 17th. Whenever the service pipe can be put under the foundation wall, and no hole through the wall has been left by the builder to that effect, the Foreman shall introduce the pipe under it, without disturbing the foundation; but if he is obliged to act otherwise, he shall have a mason to open the wall and to shut the hole through that wall after the pipe has been introduced; and he shall fill that part of the

trench with good puddle, so that the surface water be prevented from injuring the foundation.

*Boxes and Covers on the Footpath.* 18th. A wooden box shall be placed on the footpath over each stop-cock. This box shall be so placed as to allow the stop-cock to be shut or opened, and any of them not so placed shall be rectified at the expense of the foreman in charge of that work. A cast-iron cover shall be set on that box over the stop-cock.

*Sizes of Trenches.* 19th. Every trench to be six feet deep, and large enough to admit the service pipe.

*Water turned off.* 20th. When necessary to turn off the water from any street, the Foreman will order the valveman to warn the people of the district where the water is to be cut off, and the said valveman always prepared to turn it on in case of fire in the locality, and he shall also have his work so disposed as to have the water on at night. If it should happen that the water should be off for a longer period, it will be the duty of the Foreman to send notice of it

to the office of the Superintendent, mentioning the district so deprived of water.

*Watchmen and care of Trenches.* 21st. The Foreman shall always have a watchman at night in every street where there will be an excavation, with fences, lights put over or round the places so excavated, and he shall also have the footpath at night well covered with boards where it is excavated, so as to allow a free passage to foot passengers. In the case of any accident or damage caused by the work, where it will be proved that all the above precautions have not been taken, the Foreman or the watchman, whoever he may be, who was in charge at the time, shall be dismissed immediately and never re-employed by the Department.

*Service Pipes.* 22nd. In no case the Foreman shall be allowed to put a pipe through a sewer, but under it, each time there is not a depth of six feet on the top of sewer; he shall order the pipe long enough to enter two feet inside the house, provided that this house be not off the line of the street.



## Duties of the Guardian of the Aqueduct.

It shall be the duty of the Guardian of the Aqueduct: 1st. To have the control and supervision of the Aqueduct from the entrance to the Wheel-House, to look after the fences, ditches and bridges, so that they be kept in good order, and to repair the same; to see that the banks, culverts and stone-lining are maintained in their efficiency.

2nd. To prevent the water in the Aqueduct being polluted in any manner whatsoever, by persons bathing, washing or cleaning any cloth, wools, leather, skins, animals, or any noisome or offensive things, or casting, throwing or putting in it filth, dirt, dead carcasses, or other noisome or offensive things, or allowing cattle to graze or trespass on the banks, and to arrest any person found guilty of the above mentioned acts.

3rd. To remove from the Aqueduct all the floating wood, herbs, &c., which may gather

above or below the regulating gates ; to cut down all the weeds growing on the banks and on the ground of the Corporation surrounding the Aqueduct.

4th. To regulate the water of the Aqueduct to the level indicated by the Chief-Engineer of the Wheel-House, in attending carefully to the regulating gates.

5th. To take and keep a daily record of the level of the water above the regulating gates of the Aqueduct, and of the temperature of the atmosphere ; to telegraph every day at about 9 o'clock, a. m., to the office of the Superintendent, at the City Hall, the level of the water and the temperature of the atmosphere, and to make at the said office a monthly return of the same upon a blank form.

6th. To give due warning to the Superintendent of anything extraordinary that may take place in the works under his care ; in fine, to take a general interest in all that concerns his portion of the works.

## Duties of the Guardians of the Reservoirs.

1st. It shall be the duty of the Guardians of the Reservoirs, to maintain a strict surveillance over the Reservoirs under their care, so that the purity of the water be not affected in any manner whatsoever, according to the 2d section of the duty of the Guardian of the Aqueduct.

2nd. To keep the Valve-House and machinery well cleaned and in good order, and the grounds inclosed free from weeds, dirt or anything which may affect the purity of the water or mar in any shape the idea of cleanliness which should be observed. To keep their dwellings built on the Corporation property clean and tidy, and not allow any cattle or other animal or fowls on their premises. To see to fences and road, &c.

3rd. To attend to the proper regulation of the gates of the Reservoirs, as may be directed by the Superintendent or by the Chief Engi-

neer at the Wheel House ; and record every day the level of the water, the temperature, the evaporation and rain gauges ; to send to the office every month a return of the same made on a blank form.

4th. To telegraph to the office of the Superintendent, every day at about 9 o'clock a. m., the level of the water in the Reservoir, with the temperature of the atmosphere ; to inform also by telegraph the Chief Engineer at the Wheel House, the state of the water level in the Reservoir twice a day—once in the morning at about seven o'clock, and in the evening at about nine o'clock, or whenever required to do so by the Chief Engineer at the Wheel House ; to be attentive to any call by telegraph which may be given by the Wheel House or any other station.

5th. To be on watch over the Valves day and night when necessary to shut the water off from the Reservoirs, unless they be relieved by proper assistants ; and to inform the Superintendent of anything of importance that may take place in the works under their care.

6th. To never leave the premises over which they are in charge for any length of time without having previously obtained permission from the Superintendent to do so, and to observe the general rules prescribed for the Wheel House, as much as they can apply to his case.

## Duty of the Service Pipes Inspectors.

It shall be the duty of the service pipes Inspectors,

1st. To visit all the water fixtures in all the buildings and yards of their respective districts, at least, once a year, in order to see that they are kept in good order and in accordance with the Corporation by-laws.

2nd. To report every day, at the office of the Superintendent at the City Hall, any undue waste of water which may be caused by bad fixtures or by wilful neglect of the water tenants, and register such in a book kept in the above-mentioned office.

3rd. To report all water closets, their kind, and any other fixtures or engines whereby the water is used for any industrial purpose.

4th. To report also all persons they may see using hand hoses contrary to by-laws or without permit, or using water for building materials without permission, or interfering

with hydrants, stop-cocks, &c., without any authorization from the Department. This rule also applies to Hydrant Inspectors.

5th. To ascertain the consumption of water by experiment or computation, in any manufacturing establishment where water is used without meter, and report the same at the Accountant's office.

6th. To inspect and take the reading, once a month, of all the water meters in their respective districts, and report any that may be out of order or interfered with.

7th. To follow carefully all the instructions that may be given, from time to time, in the Superintendent's office, concerning the water distribution in houses or yards, and the proper maintainance of the water fixtures, and make proper returns in due time.

## GENERAL RULES.

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1st. No man shall be allowed to leave his work during the regular hours.

2nd. No man shall leave the part of the building or premises where his work lies without special cause ; and any man so found in another part of the premises, will be required to give the reason for being there.

3rd. It is strictly forbidden to carry anything out of the premises without permission from the Chief Engineer.

4th. No intoxicating liquors will be permitted to be brought into or used in the premises. No one who is in the habit of being under the influence of liquor will be continued in the employment.

5th. Any one desiring leave of absence must obtain permission from Superintendent, *and return* before expiration of leave, or the place will be supplied by another.

6th. No swearing, quarrelling, or bad language, playing or idling will be tolerated



in the establishment, and the men must preserve the utmost order and cleanliness in every part of the premises.

7th. All squares of glass broken, or any other portion of the premises, or any of the tools or machinery that may be injured or destroyed through carelessness, the cost of repairing or replacing such will be charged to the party who did it.

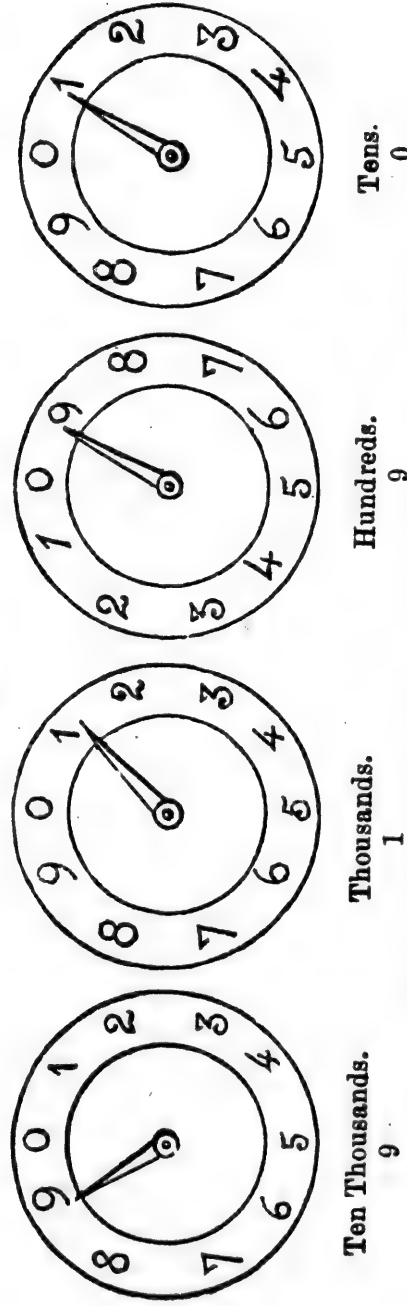
NOTE.—These Rules will be enforced in the strictest manner, and any transgression of them renders the party liable to dismissal.



The following is an explanation of Indexes to Water Meters :—

# INDEX TO KENNEDY'S WATER METER

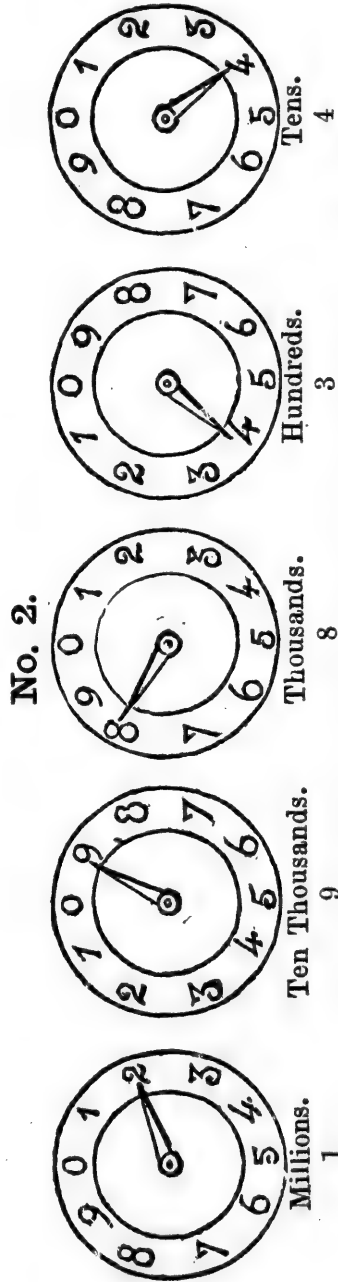
No. 1.



*Manner of Registering the Index in Kennedy's Water Meter No. 1.*

Each figure in the Dial marked Tens counts as 10, or 20, or 30, as the case may be.

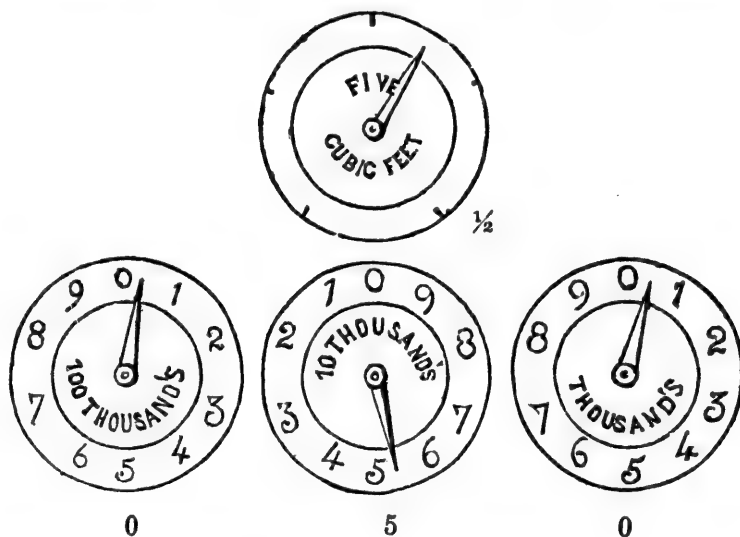
Each figure on the Dial marked Hundreds, counts 100, or 200, or 300, &c., as the case may be, and so on for the next following Dials.



The Index No. 2 is read the same way as that described above, only it reads a higher figure, that is, a million. The difference with it is, that when the hand is on, or past any of the figures of the Dial, marked millions, the figure indicated should make the same number of millions.

The hand on each Dial should read the same figure last gone over until it has fairly gone over the following figure. Thus, for instance, if one of the hands is near the figure 3, but has not fairly passed over it, the figure read should be two. Sometimes it may be difficult to tell whether the hand has passed the figure or not; this is always found by looking at the Hand on the Dial of the right, which if it reads a high figure, such as 9, or 8, or 7, &c., it indicates that the hand of the preceding Dial has not passed over the figure on which it lays; if, on the contrary, the figure is 1, or 2, or 3, it then indicates that the figure on which the hand is on is to be taken as the right figure.

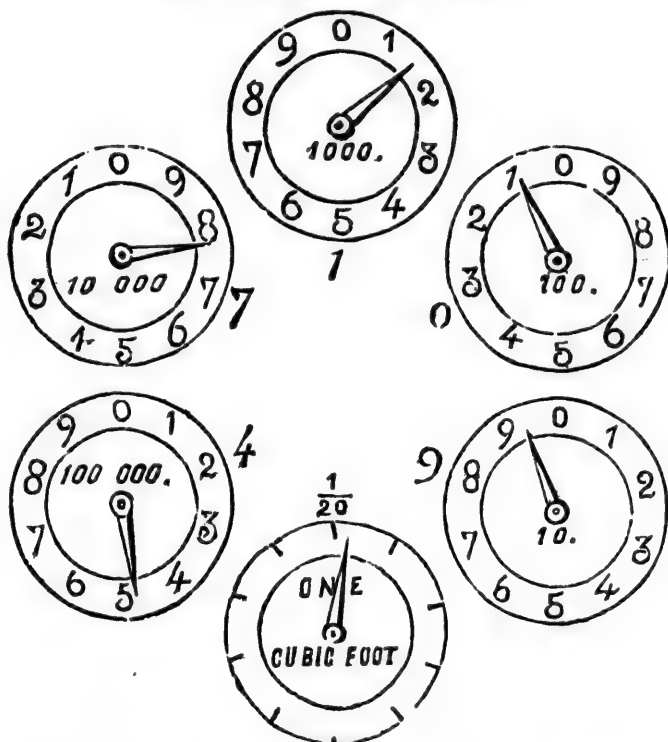
# INDEX TO AUBIN'S WATER METER.



## *Manner of Registering the Index of Aubin's Water Meter.*

Each revolution of the Hand on Dial, marked five cubic feet, counts five cubic feet. Each figure of the Dial, marked thousands, counts 100 cubic feet. Each figure of the Dial, marked 10 thousands, counts 1,000 cubic feet. Each figure of the Dial, marked 100 thousands, counts 10,000 cubic feet. The position of the hands in the above diagram reads as follows : 05,054½, so that the figure on the Dial marked thousands, is 0, that on 10,000 is 5, and that on 100,000 is 0.

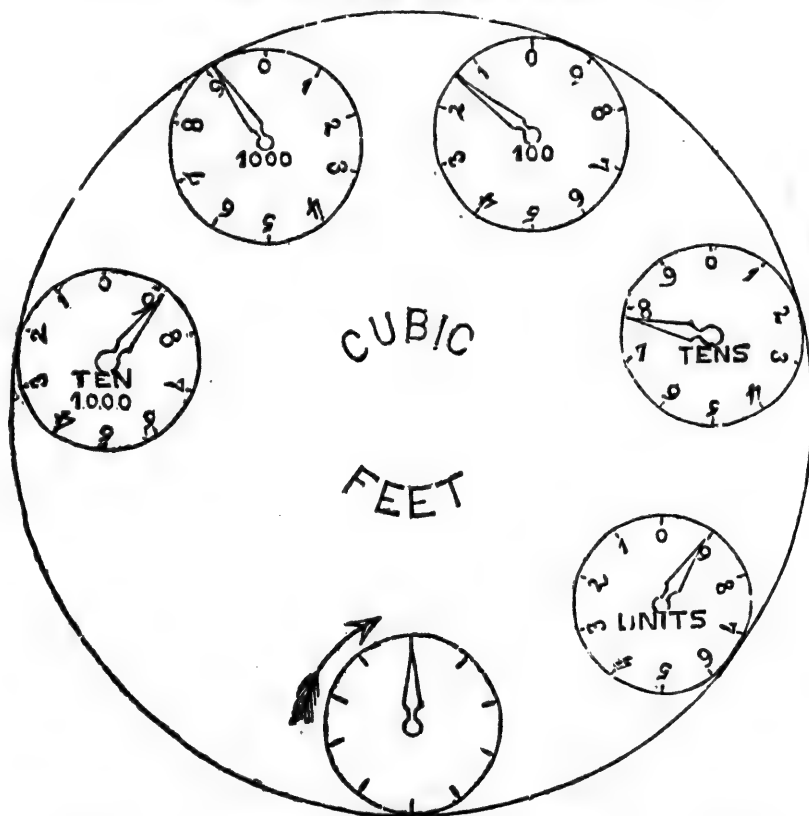
# INDEX TO H. R. WORTHINGTON'S WATER METER.



## *Manner of Registering the Index of Worthington's Meter.*

Each revolution of the hand of the Dial, marked one cubic foot, counts a cubic foot. Each figure on the next Dial, marked 10, counts 1 cubic foot; on that marked 100, counts 10, and so on for the others. The hands in the above diagram show the reading as follows: 47,109 1-20 cubic feet.

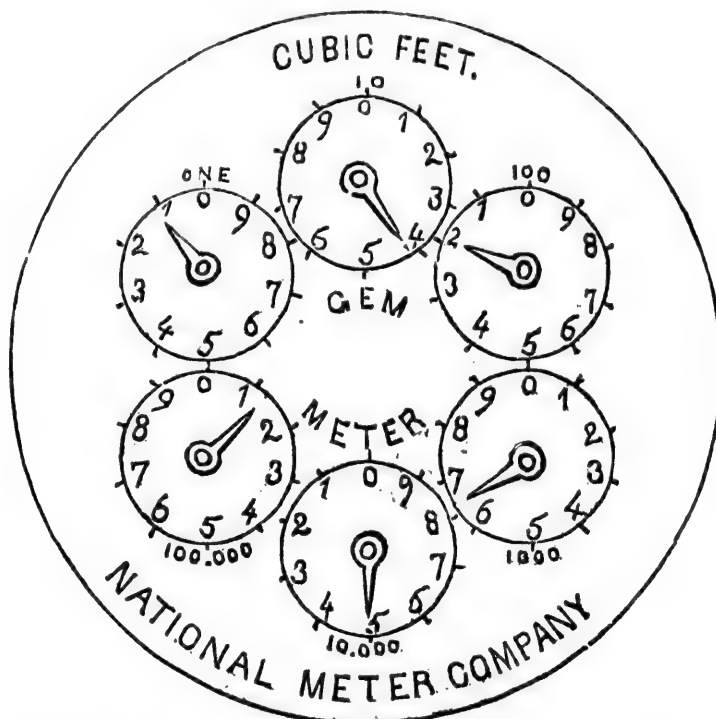
## INDEX TO THE FAIRCHILD'S WATER METER.



### *Manner of registering the Index of the Fairchild's Water Meter.*

Each revolution of the hand on the lowest dial on the Index counts one cubic foot. Each figure on the right hand dial, marked units, counts one cubic foot; on that marked tens, counts ten cubic feet; on that marked 100, counts 100 cubic feet, and so on for the others. The hands in the above diagram show the reading as follows : 89,179 cubic feet.

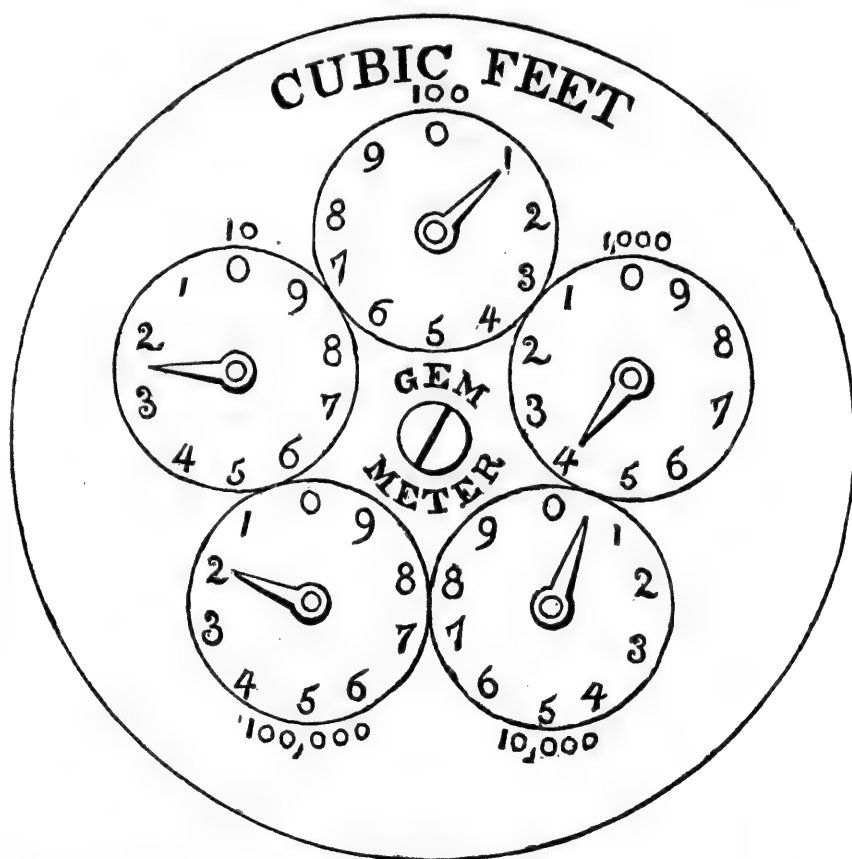
## INDEX NO. 1 TO THE GEM WATER METER.



### *Manner of registering the Index No. 1 of the Gem Water Meter.*

Each revolution of the hand on the dial marked one, counts one cubic foot. Each figure on the dial marked 10, counts one cubic foot; on the dial marked 100, counts ten cubic feet; on the dial marked 1,000, counts 100 cubic feet; on the dial marked 10,000, counts 1,000 cubic feet; on the dial marked 100,000, counts 10,000 cubic feet. The hands in the above diagram show the reading as follows: 14,624.1-10 cubic feet.

INDEX NO. 2 TO THE GEM WATER  
METER.



*Manner of registering the Index No. 2 of the Gem  
Meter.*

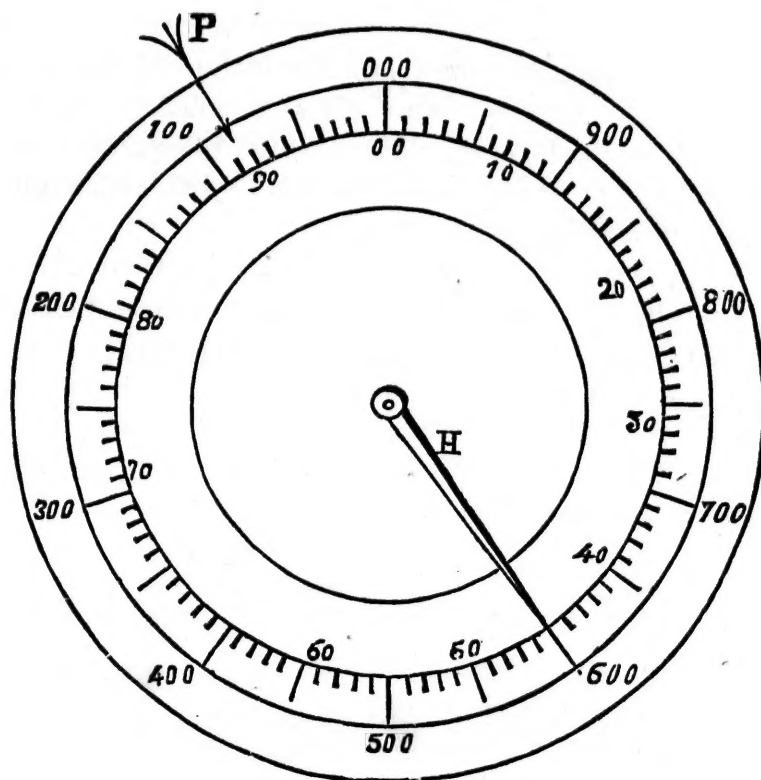
Each revolution of the hand on the dial, marked ten, counts ten cubic feet. Each figure on the dial marked 100, counts ten cubic feet; on the dial marked 1,000 counts 100 cubic feet; on the dial marked 10,000,



counts 1,000 cubic feet, and on the dial marked 100,000, counts 10,000 cubic feet. The hands in the above diagram show the reading as follows: 20,412 cubic feet,

The hands on each of the Aubin's, Worthington's, Fairchild's and Gem Meter Dials should read the figure last gone over until it has fairly gone over the following figure; thus, if one hand is near the figure 4, but has not fairly passed it, the figure to be read should be 3. Sometimes it may be difficult to tell whether the hand has passed the figure or not; this is easily found by looking at the hand on the next highest Dial in number, which, if it reads a high figure, such as 9, or 8, or 7, &c., indicates that the hand of the preceding Dial has not passed over the figure on which it lays. If the contrary, the figure on which the hand is on, is to be taken as the right figure.

# INDEX TO SIEMEN'S AND ADAMSON'S WATER METER.



## *Manner of Registering the Index of Siemens & Adamson's Water Meter.*

The Dial in this Meter revolves round, and also the hand H. Each revolution of the Dial advances the hand of one division.

This Dial has two rows of figures, one outside and the other inside the circles.

The row of figures of the outside circle is indicated by the small pointer P, which is a fixed point, and that inside by the hand H.

Each division marked by the fixed pointer P, counts 10 Galls, (Imperial,) and one revolution of the Dial counts 1,000 gallons. One division, marked by the moveable hand H, counts 1,000 Galls. (Imperial,) and one revolution of the moveable hand on the Dial indicates 100,000 Imperial Gallons.

The Index shows the moveable hand H on the 45th Division of the Dial, while the pointer P is on the 8th and half of the Dial, thus indicating 45,850 Imperial Gallons.

## RULES

*To be observed in working the Water Line Telegraph.*

- 1st—All calls to be given by the Key on the side of the Instrument; and the Station called, to answer by *giving its number in response*, and no attention to be paid to any other signal.
- 2nd.—When any two Stations are communicating, *no other Station* shall interfere with the line or instrument in any manner, nor make any attempt to receive such communication.
- 3rd.—When the Instrument is not in use, the switches are to be kept drawn forward on the Bell.
- 4th.—It shall be the duty of the men in charge of the several Stations, to test the instruments by a tap on the Key, to ascertain if the current be passing, and this is to be done at least once every hour, and as often as practicable.
- 5th.—If at any time the line be found open at any Station, a ground wire should be immediately applied, and if the Instrument be thereby placed in communication, report the same to the Central Station, and having done so, remove the ground wire at once. If on applying the ground wire *no* current passes immediately remove it.
- 6th.—Any irregularities in the working of the Instruments to be reported promptly to the Central Office.

By Order,

LOUIS LESAGE,  
*Sup't of W. W.*